

Calcium use during in-hospital pediatric cardiopulmonary resuscitation.

Pediatric advanced life support guidelines by the American Heart Association since 2000 have recommended that calcium use during cardiopulmonary resuscitation be limited to select circumstances. NRCPR investigators recently published a study in May 2008 evaluating the use of calcium during pediatric cardiac arrest in the hospital.

They reviewed 1477 consecutive pediatric cardiopulmonary resuscitation index (first) events for patients younger than 18 years submitted to the National Registry of Cardiopulmonary Resuscitation from January 2000 through July 2004. The primary outcome was survival to hospital discharge. Secondary outcomes included survival of the event and neurologic outcome.

Calcium was used in 659 (45%) of 1477 events. The use of calcium during cardiopulmonary resuscitation adjusted for confounding factors was associated with decreased survival to discharge and was not associated with favorable neurologic outcome. They concluded that calcium is used frequently during in-hospital pediatric cardiopulmonary resuscitation. Although epidemiologic associations do not necessarily indicate causality, calcium use during cardiopulmonary resuscitation is associated with decreased survival to hospital discharge and unfavorable neurologic outcome.

How can NRCPR participants use this data for process improvement in their facilities?

Additional studies are needed to directly associate calcium use with decreased survival and unfavorable neurologic outcome. Facilities should continue to review the use of calcium during cardiopulmonary resuscitation within their facility and use this study as an additional resource in training opportunities.

Calcium use during in-hospital pediatric cardiopulmonary resuscitation: A report from the National Registry of Cardiopulmonary Resuscitation. Srinivasen V, Morris MC, Helfaer MA, Berg RA, Nadkarni VM. *Pediatrics* 2008; 121; e1144-e1151